

CALIFORNIA COASTAL COMMISSION

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Commission Action:

STAFF REPORT: MATERIAL AMENDMENT

APPLICATION NUMBER: 5-00-384-A1

APPLICANT: State of California Department of Transportation- District 7

PROJECT LOCATION: Vincent Thomas Bridge, Port of Los Angeles

DESCRIPTION OF PROJECT PREVIOUSLY APPROVED: Permanent installation of 12 (200 to 1,125- watt) floodlights; eight (7,000-watt) fixed pencil beam Xenon lights; approximately 160 (175 watt) marine grade jelly jar light fixtures; glare shields; and eight 8-foot in diameter parabolic reflective discs to an existing bridge (Vincent Thomas Bridge) that spans the northern portion of the main channel of the Los Angeles Harbor.

DESCRIPTION OF PROPOSED FIRST AMENDMENT: modify the bridge lighting design by replacing the xenon skytracker lights, floodlights and parabolic discs, with 80 (19.5 watt) blue jelly jar LED lights hung along the suspension cables, and 80 (28 watt) blue rectangular LED lights attached beside the deck. Lights will operate between sunset and 1:00 a.m.

SUBSTANTIVE FILE DOCUMENTS: *Technical Report to Assess the potential impacts of the Vincent Thomas Bridge Lighting Project*, by California Department of Transportation, District 7; *Urban Sky Glow and the Lighting of the Vincent Thomas Bridge*, by Kevin W. Houser, PhD., LC

SUMMARY OF STAFF RECOMMENDATION:

The staff recommends that the Commission determine that the proposed development with the proposed amendment, subject to the conditions to limit the hours of operation during the bird migratory period, and limit the installation period to a period outside of the American falcon nesting period, is consistent with the requirements of the Coastal Act. Staff is recommending that the Commission modify the condition no. 1 and delete special condition

no. 2 as originally imposed, which is no longer necessary, and add a new condition limiting the period of light installation.

Procedural Note: The Commission's regulations provide for referral of permit amendment requests to the Commission if:

- 1) The Executive Director determines that the proposed amendment is a material change,
- 2) Objection is made to the Executive Director's determination of immateriality,

In this case, the Executive Director has determined that the proposed amendment is a material change to the project as originally described. If the applicant or objector so requests, the Commission shall make an independent determination as to whether the proposed amendment is material. 14 Cal. Admin. Code 13166.

I. STAFF RECOMMENDATION:

Staff recommends that the Commission make the following motion and adopt the following resolution:

MOTION: I move that the Commission approve the proposed amendment to Coastal Development Permit #5-00-384-A1 pursuant to the staff recommendation.

STAFF RECOMMENDATION OF APPROVAL:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the amendment as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit amendment for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the provisions of Chapter 3 of the California Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/ or alternatives have been incorporated

to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternative that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS:

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. Expiration. If development has not commenced, the permit will expire two years from the date this permit is reported to the Commission. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. Interpretation. Any questions of intent or interpretation of any term or condition will be resolved by the Executive Director or the Commission.
4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

Unless specifically altered by this amendment, all conditions imposed on the previously approved permit shall remain in effect. Included below are the conditions of the original permit followed by recommended modifications to those conditions made under this amendment:

Conditions Imposed on the Previously Approved Permit:**1. Period and Hours of Operation**

Prior to the issuance of the permit the applicant shall submit a written agreement for review and approval by the Executive Director, that provides that the lights shall operate only between the hours of sunset to 11:00 p.m., except as listed below when the lights are required to remain off:

1) During the fall (August through October) and spring (March through May) migratory bird period.

2) During overcast or foggy weather conditions (horizontal visibility reduced to less than 1,000 meters) throughout the year, the lights shall be turned off and

shall remain off until the overcast or foggy conditions have cleared in the area surrounding the bridge.

2. Automated Shut-off System for Overcast/Foggy Weather Conditions

Prior to the issuance of the permit the applicant shall provide evidence, for the review and approval of the Executive Director, that demonstrates that the applicant will incorporate an automated system to measure overcast or foggy weather conditions (horizontal visibility reduced to less than 1,000 meters) and that further shows that the measurements will be incorporated into the automated operating light system so that when overcast or foggy weather conditions arise at the bridge the lights will automatically shut-off and will remain off until the overcast or foggy conditions have dissipated.

3. Future Bird Mortality

The applicant shall agree in writing, subject to the review and approval of the Executive Director, if any significant mortality of birds is observed, the lights shall be turned off immediately until the Coastal Commission, California Department of Fish and Game, and the U.S. Fish and Wildlife Service are notified and an appropriate course of action is identified by the three agencies. The course of action may include the permanent discontinuance of the lights. Based on the course of action identified by the agencies, the Executive Director shall determine if an amendment to this permit is required.

Conditions Recommended to be Added or Modified by Amendment:

a) Modify Special Condition No. 1 as follows:

1. Period and Hours of Operation

Prior to the issuance of the permit the applicant shall submit a written agreement for review and approval by the Executive Director, that provides that the lights shall operate only between the hours of sunset to 1:00 p.m., except as listed below:

1) During the fall (August through October) and spring (March through May) migratory bird period the lights shall be operated only between the hours of sunset and 11:00 p.m.

b) Delete Special Condition No. 2.

c) Retain Special Condition No. 3

d) Add the following Special Condition:

4. Installation Period

Prior to the issuance of the permit the applicant shall submit a written agreement for review and approval by the Executive Director, that provides that all installation work shall not occur during the peregrine falcon nesting season, between mid January and mid-July, unless it has been determined by the Department of Fish and Game that there is no nesting activity.

IV. FINDINGS AND DECLARATIONS:

The Commission hereby finds and declares:

A. Project Description and Location

The applicant proposes to amend the Commission approved permit for the installation of lights on the Vincent Thomas Bridge by reducing the level of light intensity and changing the color of the light emitted from white to blue. Specially, the applicant proposes replacing the approved Xenon skytracker lights, floodlights and parabolic discs, with 80 (19.5 watt), blue jelly jar LED lights hung along the suspension cables, and 80 (28 watt) blue rectangular LED lights attached beside the deck. The lights will be operated from sunset to 1:00 a.m. All proposed lighting is for decorative purposes to visually enhance the bridge at night.

Because of the proposed lighting changes, the applicant is requesting that the special conditions of the underlying permit regarding timing and periods of operation of the lighting be modified to reflect the changes in the project.

In November 2000, the Commission approved a coastal development permit for installation of lights on the Vincent Thomas Bridge. The bridge spans the northern portion of the main channel of the Los Angeles Harbor (see Exhibit No. 1 & 2). The lighting project included the installation of 12 (200 watt to 1,125 watt) floodlights; 8 (7,000 watt) fixed pencil beam Xenon lights; approximately 160 (175 watt) marine grade jelly jar light fixtures; glare shields; and 8 eight-foot in diameter parabolic reflective discs.

The 12 floodlights and 8 fixed pencil beam Xenon lights were to be located along the two bridge towers. Eight floodlights were to be located at the lower strut, near the base of the towers to light the underside of the bridge. Four floodlights were to be located at mid-height, to illuminate parabolic art disks located on each tower at the mid-height level. The 8 Xenon lights were to be located along the outermost side of each tower at the mid-height level. One Xenon light would direct light up along the outermost side of the tower, and another Xenon light would direct light down the tower. At the top of each tower there would be a decorative convex art piece (shield) that would prevent any light from spilling into the atmosphere. All floodlights and Xenon lights were proposed with 360-degree glare shields. The horizontal span below the bridge roadway would be illuminated with 160 marine grade jelly jar light fixtures. The location and direction of the lighting, as approved, would result in

the illumination of the entire outermost side of each bridge tower and the horizontal span. The approved lighting has not yet been installed.

The Vincent Thomas Bridge crosses over the northern portion of the Los Angeles Main Channel in an east-west direction, connecting the San Pedro area of the City of Los Angeles with Terminal Island in the Port of Los Angeles (see Exhibit No.1). The bridge is a 4-lane suspension bridge built in 1963. The bridge is 1,500 feet long between towers, with back spans of approximately 506 feet on either side (see Exhibit No. 2). The two bridge towers consists of two columns or spires. The towers are located on land on either side of the Los Angeles Main Channel. The towers extend to a height of 335 feet above ground level (335 feet above sea level). The area immediately surrounding the bridge is primarily industrial, with cruise ship docks, cargo loading and storage yards, and other port related facilities.

The bridge is part of State Route 47, which is under the jurisdiction of the California Department of Transportation, who is the applicant of this project.

The bridge is located within the Port of Los Angeles. As an improvement to an existing road or highway, which is not principally for internal circulation within the port boundaries, the project is an appealable project under Section 3015(a)(3) of the Coastal Act. As an appealable project and a project located within the jurisdiction of the port, the project will be evaluated for conformance with the Coastal Act by using the applicable Chapter 3 policies of the Coastal Act.

B. Permit History

In November 1999, the applicant was before the Commission with an application request for lighting of the bridge (Coastal Development Permit application #5-99-377). The project in 1999, included 120 floodlights to light the horizontal span and towers, and 4 Xenon lights located atop each tower to direct light straight into the sky. The initial lighting was to be permanent, with lights intended to be on nightly from approximately sunset to sunrise. The Dept. of Fish and Game and the Fish and Wildlife Service, along with a number of environmental and astronomical groups and scientists expressed concerns with regards to the light impacts. Because of concerns with potential impacts to birds and potential visual impacts due to increase illumination, the Commission denied the permit application.

When the project was before the Commission, the Fish and Wildlife Service, and environmental groups, expressed concerns with the high intensity lights during periods of inclement weather, which creates the greatest potential impact to migratory birds and with added sky glow or light pollution. Most of the concerns centered around the use of the high intensity (1,125-7,000 watts) floodlights and Xenon lights (fixed searchlights). Based on these concerns and the Commission's action, the City of Los Angeles and Caltrans had numerous meetings and discussions with the Dept. of Fish and Game and the Fish and Wildlife Service, the environmental and astronomical groups that initially expressed concern

with the project, and Commission staff. From the information and input from these meetings the City of Los Angeles and Caltrans revised the lighting design to address the concerns that had been raised and submitted a new coastal development permit application.

To address this issue the applicant proposed additional measures that would further minimize the amount of sky glow during overcast or foggy conditions, and during the fall and spring neotropical bird migratory periods. To ensure that the lights would not adversely impact birds during overcast or foggy conditions, the applicant proposed to turn off the lights during foggy conditions that may occur throughout the year. Subsequently, in November 2000, the Commission approved the underlying coastal development permit. The permit was conditioned to include restrictions on the hours and time of year of operation (special condition no. 1), automatic shut off during inclement weather (special condition no. 2); and a requirement to stop light operation and consultation with resource agencies if significant bird mortality is observed (special condition no. 3). The permit, which was valid for two years from November 2000, was extended for one additional year to November 2003.

The proposed amendment would eliminate all of the high intensity searchlights and floodlights, and replace those lights with lower intensity lights (19.5-28 watts) which will reduce the amount of sky glow. The applicant is also proposing to limit the hours of operation from sunset to 1:00 a.m. throughout the year.

C. Environmental Resources

Chapter 3 Polices

Section 30230 of the Coastal Act states:

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30240 of the Coastal Act states in part:

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which

would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

The issue the proposed amendment raises is the potential impact the lights may have on the various bird species that migrate through the harbor, and resident bird species within the harbor. The applicant indicates that with the redesign of the lighting with less intensive lights, change in color, and limiting the direction of the lights the proposed amendment will have less of an impact to wildlife than the underlying approved project. Therefore, applicant is requesting that the hours and period of operation should be modified along with deleting of the condition to turn off the lights during inclement weather.

As with the original project, the Department of Fish and Game has reviewed the proposed lighting redesign. The Department of Fish and Game states that with the reduced lighting, along with the proposed minimization measures (proposed hours of operation, color and direction of lights) including limiting the installation of the lights to avoid the nesting period of the peregrine falcon, it is unlikely that migrating birds, including the falcon, would be adversely affected (see Exhibit No. 6).

The Federal Fish and Wildlife Service has also reviewed the proposed lighting design. They have indicated that because of the potential impacts to migratory birds during the migratory season and during inclement weather, they suggest that the project lights be tuned off during the migration periods and during overcast, cloudy, or otherwise hazy environmental conditions; and lighting be limited to approximately four to five hours per night during the darkest time of the night depending on the time of year (see Exhibit No. 7).

The harbor and surrounding area is located along the Pacific Flyway. The Pacific Flyway is the path that migratory birds follow along the Pacific Coast during their annual migrations. Millions of shorebirds and waterfowl travel between northern breeding grounds and southern wintering sites. The Pacific Flyway originates in Western Alaska, around the Yukon River Delta, and extends as far south as Latin America. The peak periods for bird migration through southern California are March through May and August through October.

Both migratory shorebirds and neotropical songbirds either come to this area to breed or pass through here on their way to other locations. While the majority of shorebirds migrate during the day, there are some that fly at night. Most songbirds are nocturnal migrants. Wetlands and coastal bays are stopover sites for resting and feeding birds.

According to the applicant, a list of approximately 340 species of birds that have been seen at or near Ken Malloy Harbor Regional Park (located about 3 miles northwest of the Vincent Thomas Bridge) has been compiled from a variety of sources (Heindel, 2000). This list was cross-checked with a list of neotropical migrant birds (Rappole, 1995) to identify the migrant species that are likely to fly in the vicinity of the Vincent Thomas Bridge. Exhibit No. 5 provides a list of birds likely to be found in the area. According to the applicant, of the species listed, most of the song birds, a large number of the waterfowl and shorebirds, and

a variety of other types of birds, are nocturnal migrants (Kerlinger and Moore, 1989). During the migration season, which is from August through October for the fall period and March through May for the Spring period, migration generally occurs during the late evening and early morning hours.

Although there are no available specific studies about the nocturnal migrants and numbers of birds that fly over the harbor area, approximately 100,000 to 1,000,000 birds use Seal Beach, which is approximately 20 miles to the south, as a major stopover, according to the Caltrans technical report prepared for the underlying permit. In addition to the migratory birds that may fly through the area, the bridge itself is also home to a pair of American peregrine falcons (*falco peregrinus*). According to the Caltrans report, the peregrines nest/roost on the steel-girders below the bridges' roadway between the two towers.

The peregrine was recently removed from the federal endangered list. However, the peregrine is still protected under the federal Migratory Bird Treaty Act. As such, it is considered illegal to harm, harass or kill individuals of this species. The peregrine is also on the State's endangered list. The state Endangered Species Act protects listed species from being killed or harmed.

There have been many studies and reports that indicate that lights on tall structures can pose a problem for night migrating birds and cause mortalities among these birds (i.e. *Collision Course: The Hazards of Lighted Structures and Windows to Migrating Birds*, L.J.E. Ogden, September 1996; *The Effects of Overcast Skies on the Orientation of Free-flying Nocturnal Migrants*, K.P. Able, 1982; *The mechanisms of the trapping effect of artificial light sources upon animals*, F.J. Verheijen, Netherlands Journal of Zoology, 1958). However, studies that have been done are generally associated with tall (over 200 feet) communications towers that are generally located in rural sparsely lit areas.

Mortalities associated with tall structures are referred to as tower-kills. These tower-kills have also been known to involve lighted monuments (e.g. the Washington Monument), smoke stacks and airport ceilometers. Most of the reports from the United States come from the eastern and central part of the country. There is no documentation regarding lighted bridges over waterways and the impacts to birds. However, this could be due to birds hitting bridge structures and falling into the water or being removed quickly by scavengers. Therefore, any mortality may go unnoticed.

Although it is not known for certain why birds fly into tall-lighted structures there is a significant amount of data that indicates that tall-lighted structures cause bird kills. The cumulative impact of illuminating additional structures in a highly developed and lighted area is also not known at this time and there is little information addressing this issue along the west coast of the United States.

According to reports, the birds most affected by lit towers are the neotropical migratory songbirds, in particular thrushes, vireos, and warblers. According to existing reports, there

are two mechanisms for bird mortality that occur at communication towers. The first is when birds flying in poor visibility do not see the structure. Communication towers that are lighted at night for aviation safety may help reduce bird collisions caused by poor visibility, but the lights bring about a second mechanism for mortality: when there is a low cloud ceiling or foggy conditions, lights on a tower refract off water particles in the air creating an illuminated area around the tower. Migrating birds have lost their stellar cues for nocturnal migration in these weather conditions. When passing the lighted area, the increased visibility around the tower may become the strongest cue the birds have for navigation, and thus they tend to remain in the lighted space by the tower. Mortality may occur when they run into the structure and its guy wires, or even other migrating birds as more and more passing birds cram into the relatively small, lighted space. Other birds may fly around in circles around the light source until they become exhausted and fall from the sky.

The exact magnitude of the problem is unknown. The Caltrans report states that on January 22, 1998, in western Kansas, an estimated 10,000 Lapland lonspurs were killed at, and in the vicinity of, three towers and a natural gas pumping facility. In Florida, a 25-year study on bird mortality associated with a communication tower just north of Lake Iamonia, was conducted by ornithologists stationed at a nearby research station. Over the 25-year period, 42,386 birds were found scattered beneath the tower (*Blinking lights mark scenes of death for birds*, by Jim Cox, Tallahassee Democrat).

The Caltrans report states that:

Many other incidents involving up to, and in some cases more than, 1,000 birds are noted in an annotated bibliography prepared by the U.S. Fish and Wildlife Service's (the Service) Office of Migratory Bird Management (Trapp, 1998). In 1979, the Service estimated an annual mortality at around 1.4 million birds (Manville, 1999). Today's conservative estimate is upwards of 4 million birds killed per year.

The Vincent Thomas Bridge is currently lit with flashing red navigational lights on the top of each bridge tower. According to reports, birds are thought to be less sensitive to flashing red lights, and lights that are on the far end of the color spectrum, such as blue lights. The Caltrans report indicates that bridge maintenance crews have not reported finding any dead birds near or on the bridge. However, the report further states that it is possible that any existing problem would go unnoticed because the birds could fall in the water or be quickly removed by scavengers.

The suggestions made by the Fish and Wildlife Service to turn off lights during the migration periods and during overcast, cloudy, or otherwise hazy environmental conditions; and limit lighting to approximately four to five hours per night during the darkest time of the night depending on the time of year, are similar to the special conditions imposed by the Commission on the original permit. Commission staff has weighed the comments made by the Department of Fish and Game and the Fish and Wildlife Service. With the changes

made with this redesign, such as use of blue lights, reduction of light intensity, limiting the direction of lights, restriction on installation during falcon nesting season, and limiting the lighting operation to 1:00 a.m., the potential impact to wildlife will be significantly reduced. However, as indicated by the F&W Service, there is still the concern that the new lighting design has the potential for impacting birds during the migratory season. Staff has contacted and discussed the project with F&W Service. Although the F&W Service feels these additional suggested measures would reduce any potential impacts to migratory birds, the main concern, or greatest potential for adverse impacts, is during the migratory season. The potential impact to migratory birds outside of this period, based on the redesign of the project and hours of operation, would be insignificant. Therefore, to address F&W Service concerns and reduce the potential impact of the project during the migratory period, the amendment is conditioned to modify special condition no. 1 to limit the hours of operation between sunset and 1:00 a.m., as proposed by the applicant, and limit the hours during the fall and spring migratory bird period, between sunset and 11:00 p.m. With the proposed redesigned project and modification to special condition no. 1 requiring the lights to be turned off during inclement weather is not necessary since the lights will be turned off during the migratory seasons at 11:00 a.m., which is considered before the evening's main migratory period. Therefore, special condition no. 2 is deleted.

Furthermore, in the event that there is any significant mortality of birds, special condition no. 3 of the original permit requires that the lights shall be turned off immediately until the Coastal Commission, the California Department of Fish and Game and the U.S. Fish and Wildlife Service are notified and an appropriate course of action is identified, including the filing of an amendment to the permit. This condition ensures that if there are identified impacts outside of the migratory bird season, additional measures can be imposed by the Commission.

With regards to the potential impact to the peregrine falcon, any impacts should not be significant since the birds nest/roost under the roadway within the bridge girders which will not be illuminated by the project. In the Caltrans original report it states that a peregrine expert and consultant/monitor for the Vincent Thomas Bridge seismic retrofit project indicated that the lighting design for the original project would not adversely impact the peregrines. Therefore, the redesign, which uses less intense lighting, should not impact the falcons. However, according to the Department of Fish and Game, construction activity and initial light activation, during the peregrine nesting season (mid January to mid July) could impact the birds. Caltrans has indicated that installation is planned for late July or August. Furthermore, there is no current nesting activity occurring on the bridge by the resident pair of falcons. To ensure, that any nesting activity is not disrupted by the project installation, a special condition is necessary to ensure that light installation activity occurs outside of the falcon's nesting season, or that the Department of Fish and Game has determined that there is no nesting activity at the time of installation. As conditioned, impacts to the falcon will be minimized.

The Commission finds that, only as conditioned by this amendment, will the project minimize any substantial adverse environmental impacts and be consistent with Section 30230 and 30240 of the Coastal Act.

D. Visual Impact

Section 30251 of the Coastal Act states in part that:

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, to be visually compatible with the character surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.

As stated, the Port of Los Angeles is developed with numerous industrial and port related facilities. With such development there are numerous lights throughout the Port area. These lights are located on/in buildings, on cargo cranes that extend to approximately 200 feet in height, and large multi-acre parking and cargo storage lots.

Based on visual observation, the port area surrounding the two towers is well lit due to 24-hour port operations and safety concerns. The applicant has submitted a light report (*Urban Sky Glow and the Lighting of the Vincent Thomas Bridge*, Kevin W Houser, Ph.D) that was prepared for the applicant, to address the issue of the amount of light the project will create in the area (see No. 11). The study involved: 1) direct measurements of sky luminance in the region around the Port of Los Angeles, and 2) estimation of the increase in sky glow at Palomar Observatory that would likely result from the proposed lighting.

Based on the information compiled, the report concludes that based on direct quantitative measurements the sky above the Port of Los Angeles is considerably brighter than the sky in the surrounding areas. Because of the existing light conditions at the port, the report indicates that the increase in urban sky glow as a result of the originally approved project would not be significant. Using an empirical formula ("Walkers Law") to estimate urban sky glow the report estimates that the sky glow would increase by 0.029%. According to the report, the estimate is based on conservative assumptions and using more realistic assumptions the actual increase would be less than 0.008%. The proposed light redesign will have no greater sky glow than the previously approved project, and because of the change in the type of lighting, and color of light being used, the amount of light glow would actually decrease from what was initially approved.

According to reports on sky glow, there are two mechanisms that contribute to increases in sky glow: 1) an increase in atmospheric particulates, and 2) additional lighting spilling into the atmosphere. The report prepared for the initially approved project states that if lighting

is held constant, the magnitude of sky glow is a function of the atmospheric conditions at any fixed ground location. An increase in atmospheric particulates may result from an increase in pollution, clouds, humidity, and/or other airborne matter.

As stated, the area surrounding the Vincent Thomas Bridge is a highly developed industrial area and is brightly illuminated. The lighting in the port is generally with high/low pressure sodium lights that produce light in wavelengths in yellow or orange light. These type of lights are used because the light within this wavelength travels farther in fog and haze. The lights proposed to light the bridge structure will be blue LED lights. This type of light was chosen over the more efficient high/low pressure sodium lights, commonly used throughout the port, to minimize the amount of sky glow. However, the use of any light will still produce stray light. The amount of stray light can be minimized by the type of lights used, color of lights, and directional orientation. As proposed the applicant has designed the lighting with good optics, has reduced the intensity of the lights, is using blue lights, and is limiting the lights to a maximum of 10 degrees above and below the horizontal plane. With these proposed measures the amount of light escaping into the atmosphere will be significantly reduced and will not significantly contribute to sky glow in the area.

The Commission finds that as proposed the amendment will not have any substantial adverse visual impact to the surrounding area and will be consistent with Section 30251 of the Coastal Act.

E. Energy Use

Section 30253 of Chapter 3 of the Coastal Act states in part new development shall:

- (4) Minimize energy consumption and vehicle miles traveled.

This policy has been applied to rural areas to manage growth and concentrate development within developed areas. The Commission has generally not applied this policy to individual projects within urban areas that have the developed infrastructure to support new development.

In this particular case the proposed project will be located in the developed port area of the City of Los Angeles. The City of Los Angeles' Department of Water and Power will provide electrical power through existing nearby lines. A new electrical connection with transformers will be run from the nearby electrical lines to the base of each tower to power the lights. According to the Department of Water and Power (DWP) there is an adequate electrical supply to power the project. Furthermore, the applicant has indicated that in the future a solar panel may be added to DWP's solar field in the Mohave Desert to provide the electricity needed for these lights.

According to the California Department of Transportation the lights will operate on average approximately 6 hours per evening, from approximately sunset to 1:00 a.m. The 160 lights proposed on the bridge will total approximately 8,322-kilowatt hours (kWH) per year. This total is more than approximately 95% less than the previously approved lighting project.

The Commission, therefore, finds that the project will not result in urban sprawl but will continue to concentrate new development within an existing developed area and the City's current supply of electricity is adequate to support the new project. Therefore, the amendment, as conditioned, will be consistent with Section 30253 of the Coastal Act.

F. California Environmental Quality Act

Section 13096 of the Commission's regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(i) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect which the activity may have on the environment.

The proposed amendment, as conditioned, has been found to be consistent with the Chapter 3 policies of the Coastal Act. All adverse impacts have been mitigated by conditions of approval and there are no feasible alternatives or feasible mitigation measures available which would lessen any significant adverse impact the activity may have on the environment. Therefore, the Commission finds that the proposed amendment, only as conditioned, is consistent with CEQA and the policies of the Coastal Act.